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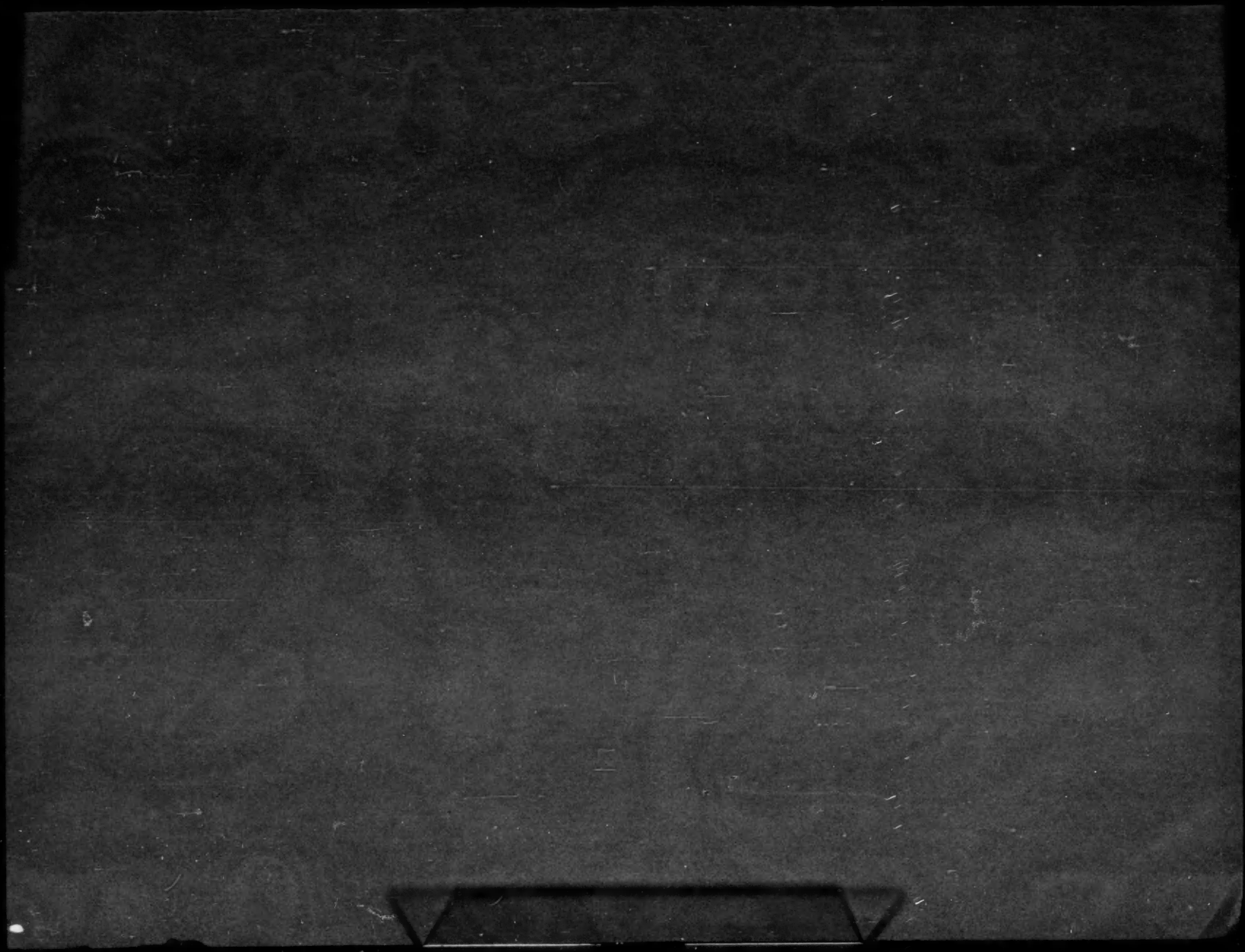

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AGRICULTURAL NEWS LETTER

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"AMMATE" WEED KILLER CONTROLS POISON IVY IN APPLE ORCHARDS

"Ammate" weed killer was used successfully for the control of poison ivy in apple orchards in a test conducted in New Jersey in 1949. It is described by Ernest G. Christ, of the New Jersey Agricultural Experiment Station, at New Brunswick, in the July 1950 issue of HORTICULTURAL NEWS, official publication of the New Jersey State Horticultural Society.

"Poison ivy is often a problem weed in apple orchards, especially in those grown with a sod cover," Mr. Christ points out. "When poison ivy becomes well established under a tree, it forms a thick ground cover and a tightly matted root system. In addition to being a nuisance at harvest time, poison ivy competes with the tree for both nutrients and moisture."

Mr. Christ's article was based on a cooperative test conducted in 1949 in New Jersey apple orchards by the departments of Horticulture and Farm Crops. The material used to kill the ivy was "Ammate" weed killer (ammonium sulfamate), a product of Du Pont Company research. Following is his description of the project:

"One spray was applied beneath 30-year apple trees in June and practically all ivy was killed. A few scattered plants are growing now under the sprayed trees and should be sprayed to prevent their multiplying.

Proper Concentration Recommended

"The material 'Ammate' was used at the rate of one pound in one gallon of water. About two gallons of spray were needed to cover thoroughly the poison ivy beneath a tree with a 30-foot spread. The ivy foliage was sprayed thoroughly but there was little or no runoff. 'Ammate' should be used with some caution because it will kill foliage and limbs of the apple tree. Where ivy is climbing the trunk of the tree, it should be cut down and not sprayed while on the tree. Two men are needed for the job. One is needed to hold the low limbs of the tree while the other applies the spray.

"Some growers have had success using 'Ammate' at the rate of three-quarters of a pound in one gallon. Lower concentration than this is not recommended. 'Ammate' should be applied sometime during June and until mid-August. One application will kill most of the plants but a second spray may be necessary after about two weeks to kill some few plants that survive. In 1949 one spray seemed to kill practically every plant and the hot, dry weather following the application increased the effectiveness of the spray."

The following article contains additional information on a very interesting development in cattle feeding. Two experiments on the feeding value of rations for steers were conducted in 1949-1950 by the Department of Animal Husbandry of Purdue University. The AGRICULTURAL NEWS LETTER is summarizing them in one article, accompanied with tables, through the courtesy of Mr. W. M. Beeson, Professor of Animal Husbandry.

The AGRICULTURAL NEWS LETTER, in its issue of November-December, 1948 (Vol. 16 No. 6) previously reported the pioneering work done by Mr. Roswell Garst, of the Garst and Thomas Hybrid Corn Company, at Coon Rapids, Iowa, in using corn cobs for feed.

PURDUE UNIVERSITY TESTS ROUGHAGE RATIONS FOR STEERS

Interesting results involving the use of corn cobs as the source of roughage for steers were obtained in two experiments by the Department of Animal Husbandry of Purdue University during the 1949-1950 winter.

In one trial, involving three roughage rations, corn cobs proved to be very useful. In the second trial, steers were wintered on corn cob rations formulated with various protein materials. It was shown that steers will grow satisfactorily if their ration of cobs is fortified with a protein supplement, molasses, minerals and Vitamin A. Urea was effective when used to replace a portion of the soybean oil meal used as a protein feed in the test.

A summary of the experiments and tables showing the results are reproduced here with the permission of W. M. Beeson, professor of animal husbandry, who participated in both trials.

First Test Described

Results of the first trial are told in report no. 47, issued by the Department of Animal Husbandry, Purdue University, Lafayette, Indiana, on April 21, 1950. This was a feeding experiment to compare the growth response of wintering steer calves, which were fed respectively oat straw, ground corn cobs, and corn silage, as the sole roughage. Each of the three lots received a standard protein - mineral - salt supplement at 3.5 pounds per day.

One of the objects of the test, as described by Professor Beeson and his colleagues, was "to determine how well steer calves would grow on oat straw which had been supplemented with a concentrate mixture."

The results indicated that oat straw was less economical than ground corn cobs, or corn silage as roughage material.

In the lot fed corn cobs, for every 100 pound gain in weight, the steers were fed 742 pounds of roughage and 202 pounds of supplement, at an average cost of 11 cents for every pound of weight gained. In the lot fed corn silage, the steers were given 1,423 pounds of roughage and 160 pounds of supplement per 100 pounds of weight gained, at an average cost of 12 cents. In the lot fed oat straw, however, the steers ate 1,337 pounds of roughage and 377 pounds of supplement -- and the cost of the feed per pound of gain jumped to 21 cents. The feed costs and the results are shown in the table reproduced opposite page 4.

Composition of Purdue Cattle Supplement

The Purdue Cattle Supplement used in the first test was comprised as follows -- per 1,000 pounds:

Soybean oil meal	643.1 pounds
Molasses Feed (45% molasses)	285.8
Bonemeal	51.4
Salt	17.2
Vitamin A Concentrate	2.5
	1,000 pounds

For the experiment, Shorthorn steer calves from Colorado and Montana bought at the Fall Cattle Feeders Sale in Chicago were shipped to Lynnwood Farm, Carmel, Indiana, where the test was conducted. The 101 animals involved in the experiment were divided as follows: Lot I -- 33 steers; Lot II -- 34; Lot III -- 34. The test started on December 21, 1949, and continued for 112 days. In addition to a roughage and a supplement, the steers were given free access to a mineral mixture of two parts steamed bone meal and one part iodized salt, which was fortified with one ounce of cobalt sulfate per 100 pounds mineral mixture. In addition the steers had free access to plain loose salt in another box.

A COMPARISON OF OAT STRAW, CORN COBS AND CORN SILAGE FOR WINTERING STEER CALVES

December 21, 1949 - April 12, 1950 - 112 Days - Preliminary Report
(Shorthorn Steers - Lynnwood Farm)

Lot Ration	I Oat Straw (1) Supplement A	II Corn Cobs (1) Supplement A	III Corn Silage (1) Supplement A
Steers per lot	33	34	34
Av. initial wt., lb.	485	479	478
Av. final wt., lb.	589	671	721
Total gain per steer, lb.	104	192	243
Av. Daily gain, lb.	0.93	1.72	2.18
Av. Daily Feed			
Roughage, lb.	12.4	12.8	31.0
Supplement A (1), lb.	3.5	3.5	3.5
Minerals - free choice	-	-	-
Feed per 100 lb. Gain			
Roughage, lb.	1337	742	1432
Supplement A (1), Lb.	377	202	160
Feed cost per lb. gain (2), cents	21	11	12

(1) Supplement A composition is given on page 4. From Supplement A each steer received a daily feed of 2.25 lb. soybean oil meal, 1.00 lb. molasses feed (45% molasses), bonemeal, iodized salt, cobalt and a Vitamin A concentrate.

(2) Feed costs - Oat straw $10.00 per ton, Corn Cobs $10.00 per ton, Corn Silage, $8.00 per ton, and Supplement A $72.00 per ton.

Test on Corn Cob Rations

In their second steer feeding test (Mimeo No. A.H. 48, April 21, 1950), Professor Beeson and T. W. Perry of Purdue University studied various protein materials in corn cob rations. Among other things, they showed that urea could be used to replace a portion of the soybean meal as a source of protein. This confirms the work of other investigators that "Two-Sixty-Two" feed compound may be used in ruminant feeds to supply up to a third of the protein.

Beeson and Perry stressed that "cobs are a roughage feed" and that "cattle will not fatten on cobs, but they will grow if the cobs are properly fortified." They repeatedly pointed out the limitations of cobs as high energy food, while at the same time showing that cobs need not be entirely wasted, as they do have value as roughage.

"Potentially, cobs have a feeding value which approaches the value of hay from the standpoint of energy, but this energy contained in cobs cannot be utilized by cattle or any other ruminant unless the cobs are fortified with certain nutrients so that billions of bacteria and other microorganisms in the rumen can break the cobs down into a form which can be digested and utilized by cattle. Fundamentally our problem is to design rations for wintering cattle on ground cobs which are capable of maintaining the bacterial and microorganic population of the rumen so that these billions of bacteria can work for the cattle and break the cobs down into useable form."

Colorado Steers Used in Test

The table reproduced opposite page 6 shows the results obtained with six lots of 16 steers each, with initial weights running from an average of 590 to 595 pounds per lot. They were short yearling Hereford steers, brought to Purdue from near the Rocky Mountain National Park in Colorado. The tests were conducted at the Purdue Cattle and Sheep Feeding Barn, starting on November 4, 1949, and continuing for 196 days.

The steers in this test, as in the one previously described, were given free access to a mineral mixture composed of two parts of steamed bonemeal and one part of iodized salt, which was fortified with one ounce of cobalt sulfate per 100 pounds of mineral mixture. They also had access to plain loose salt.

Lot I was the control lot. The steers in it received no concentrate mixture. They ate Red Clover and Timothy Hay, salt and minerals only.

How Cobs Were Fed to Steers

Lots II to VI received the experimental mixtures. This is the way they were fed: The cobs were delivered in ton loads as needed, and ground through a hammer mill. Twice a day -- morning and evening -- they were scattered in the feeding troughs, and the experimental concentrate mixtures were poured over the cobs and mixed in with a fork. As the reports explained, the amounts, which varied from 3.5 to 5.37 pounds, "were adjusted so that each group received the same amount of total digestible nutrients and crude protein daily."

These mixtures, for each of the five lots, were as follows:

Lot 2 - Soybean Oil Meal	643.1	pounds
Molasses Feed (45% molasses)	285.8	
Bonemeal	51.4	
Salt	17.2	
Vitamin A Concentrate	2.5	
Total	1000.0	
Fed per steer daily	3.5	

Lot 3 - Soybean Oil Meal	388.0	pounds
Ground Corn	232.8	
Molasses Feed (45% molasses)	277.2	
Urea	33.2	
Bonemeal	49.8	
Salt	16.6	
Vitamin A Concentrate	2.4	
Total	1000.0	
Fed per steer daily	3.6	

Lot 4 - Distiller's Dried Solubles	532.0	pounds
Urea	47.8	
Ground Corn	90.4	
Molasses Feed (45% molasses)	266.0	
Bonemeal	47.8	
Salt	16.0	
Total	1000.0	
Fed per steer daily	3.75	

Lot 5 - Brewer's Yeast	49.4	pounds
Soybean Oil Meal	548.2	
Molasses Feed (45% molasses)	274.0	
Ground Corn	60.2	
Bonemeal	49.4	
Salt	16.4	
Vitamin A Concentrate	2.4	
Total	1000.0	
Fed per steer daily	3.64	

WINTERING STEERS ON CORN COBS - 1949-1950 (196 Days)

Lot No.	Ration	Daily Feed lb.	Feed per lb. Gain lb.	Initial Weight lb.	Final Weight lb.	Gain per Steer lb.	Daily Gain lb.	Cost per lb. Gain cents
I	Clover-Timothy Hay	20.1	22.8	595	767	172	0.88	29
II	(Corn Cobs (Supplement ((Soybean Oil Meal)	14.7 3.5	11.5 2.7	592	843	251	1.28	16
III	(Corn Cobs (Supplement (Urea)	14.6 3.6	11.5 2.8	590	840	250	1.27	15
IV	(Corn Cobs (Supplement ((Distillers Solubles) ((Urea)	14.5 3.75	12.2 3.2	591	824	233	1.19	24
V	(Corn Cobs (Supplement ((Brewer's Yeast)	14.7 3.64	11.4 2.8	592	844	252	1.28	17
VI	(Corn Cobs (Supplement ((Alfalfa Meal)	14.6 5.37	10.3 3.8	590	869	279	1.42	18

Lot 6 - Soybean Oil Meal	275.6 pounds
Corn	121.0
Alfalfa Meal	372.4
Molasses Feed (45% molasses)	186.2
Bonemeal	33.6
Salt	11.2
Total	1000.0
Fed per steer daily	5.37

Summary of Feed Costs

The feed costs, used in making the summary, were as follows:

Feed	Cost per Unit	Cost per Pound
Soybean Oil Meal	$ 70.00 per ton	$ .035
Molasses Feed (45% molasses)	60.00 per ton	.030
Distiller's Dried solubles	150.00 per ton	.075
Corn Cobs	10.00 per ton	.005
Hay	25.00 per ton	.0125
Alfalfa Meal	80.00 per ton	.040
Corn	1.12 per bu.	.020
Ground Corn	0.02 per lb.	.020
Brewer's Yeast	14.00 per 100 lbs.	.140
Urea	0.06 per lb.	.060
Salt	1.50 per 100 lbs.	.015
Bonemeal	4.90 per 100 lbs.	.049
Vitamin A Concentrate	20.00 per 25 lbs.	.800

Beeson and Perry, in the table and in the summary of their findings, showed that steers will grow at a rate of from 1.19 to 1.42 pounds daily when corn cobs are used as roughage with supplements. On the other hand, Lot No. 1, receiving only clover and hay, gained 0.88 lbs. per day, and at a cost of 29 cents per pound gained.

Urea Supplement Proved to be Economical

Lot 3, with an urea supplement, was the most economical, as the cost per pound gained was only 15 cents. In second place was Lot 2, with soybean oil meal supplement, with 16 cents.

In view of the success with urea, the report stated: "Urea may be used to replace 1/3 of the protein of soybean oil meal in a cob ration (compare Lots 2 and 3)."

The biggest weight gain -- although not the most economical -- was registered by Lot 6, fed on an alfalfa meal diet. The report remarked: "Apparently alfalfa meal contains some nutritional factor or factors which aid in balancing a corn diet and stimulates growth in cattle beyond any extra energy or protein supplied by the alfalfa meal."

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The urea used for these trials was supplied in the form of "Two-Sixty-Two" feed compound, a urea composition developed by the Polychemicals Department of the Du Pont Company. It is specifically designed for use by commercial feed manufacturers.

"Two-Sixty-Two" contains 42% nitrogen that can be used by ruminants as a source of protein. In determining the protein content of feedstuffs, the quantity of the nitrogen in the material is multiplied by 6.25. When one multiplies 42 by 6.25, the result is 262 -- hence the Du Pont's registered trade mark "Two-Sixty-Two". In other words, one pound of "Two-Sixty-Two" is equivalent to 2.62 pounds of protein.

TREATING CERTIFIED SEED RECOMMENDED IN GEORGIA

Even if seed are certified -- treat them before planting.

That is the advice given Georgia growers by Julian H. Miller of the University of Georgia.

"We find that many growers are under the misapprehension that if seed are certified, they do not need to be treated," Mr. Miller wrote in the May, 1950 issue of "Georgia Crop Improvement News." "We have found in the laboratory over a period of many years that even the best certified seed are carriers of disease-producing organisms and that substantial increases in stands and yields can be secured by proper seed treatment.

Mr. Miller also pointed out that when a treated seed is planted, it creates a sterile area in the soil around it, "and so soil organisms cannot immediately attack the seedling." He added:

"Follow the recommendations of your County Agent or manufacturer and treat certified seed before planting."

Specific Recommendations Made

Barley, oats, and wheat, Mr. Miller said, "carry disease producing fungi on the seed coats, and improved stands and less smut can be secured by treating with a disinfectant. This is especially important with oats and barley that are subject to attack by the Helminthosporium fungi. It is well to remember that rusts and powdery mildews produce spores that blow in to the fields through the air."

For the above small grain, Mr. Miller recommended use of New Improved "Ceresan" seed disinfectant at the rate of 1/2 ounce per bushel for dusting, or "Ceresan" M seed disinfectant at the rate of one pound per gallon of water for slurry treatment.

"All grass seed should be treated," Mr. Miller said, "especially Ky 31 and Alta fescue as species of Helminthosporium come in on the seed." For treating grass seed with a dust, he suggested eight ounces of "Arasan" seed disinfectant per 100 pounds of seed, and for a slurry, three pounds of "Arasan" SF per gallon of water.

E. I. du Pont de Nemours & Company, Inc., was owned by 122,386 stockholders as of September 30, 1950, an increase of 3,654 over the number of holders recorded on June 30, 1950. This is an increase of 17,938 over the number as of September 30, 1949.

ARKANSAS EXTENSION FORESTER RECOMMENDS KILLING UNDESIRABLE HARDWOOD TREES

LITTLE ROCK, Ark. -- "Ammate" weed killer has been recommended to help put Arkansas' upland forest areas back into full production. The recommendation was contained in leaflet No. 138, entitled "Killing Hardwood Trees with 'Ammate'," released by the Agricultural Extension Service (May 1950).

Extension Forester Harold A. Howell, author of the leaflet, explained that "six out of every ten hardwood trees on upland farms have no commercial value."

"Even after using as many undesirable trees as possible for fuelwood and lumber, many will still be left. And their presence in the farm forest makes profitable timber growing impossible," he said.

Chemical Is Better Than Girdling

"Ammate" kills such trees faster than girdling, according to the forester. It also prevents most sprouting and hastens decay. It is poisonous only to plants. He said trees that have been successfully killed with "Ammate" include elm, blackjack oak, sweet gum, ash, willow, bay, persimmon, and small hickory.

Mr. Howell recommended that persons desiring to kill trees other than those listed should first make tests on at least 10 trees to see if the "Ammate" is effective against them also."If the trees are poisoned in fall or winter, an examination the middle of the following summer should tell whether the poison is working. If applied in spring or summer, results cannot be judged accurately until midsummer a year later," he said.

FERTILIZER LEFT IN DRILL OFTEN CAUSE OF TROUBLE

It does not take long, under humid conditions, to rust out a fertilizer drill in which some of the fertilizer material has been left. Breakage of drill parts often results from such neglect.

Whenever the drill is out of use for an extended period, it should be run free of fertilizer and the box and mechanism cleaned by hosing it out with water under pressure, according to W. C. Krueger, extension farm engineer at Rutgers University, New Brunswick, N. J. A high pressure spray nozzle is excellent, he said, adding that the important thing is to wash all fertilizer chemicals out of the working parts whenever they go into storage for any appreciable time.

SHORTAGE OF COTTONSEED POINTS UP NEED FOR TREATING BEFORE PLANTING

Cotton planters this year are being urged to make the most of their cottonseed -- by treating it chemically before planting.

The proper use of seed disinfectants -- as well as good seed, fertilizers, and insecticides -- is of more than usual importance this year because of the large production goal.

The United States Department of Agriculture has asked for a 16,000,000-bale crop in 1951. This is 60% over the 1950 crop of just under 10,000,000 bales.

Before the 1950 crop was planted, the Department of Agriculture made a total national allotment of 21,600,000 acres. Farmers, however, actually planted only 19,000,000 acres. In many areas, the weather was unfavorable in 1950. For 1951, all restrictions on planting have been lifted.

Seed Treating Helps Maintain Germination

As the time for planting approaches, attention on seed treating is increasing. One reason is that, because of the small 1950 cotton crop, the amount of cottonseed now available is below normal. Thus it is more important than usual that everything be done to protect every seed from its enemies, so each seed can produce a plant.

Across the cottonbelt, crop improvement associations, cotton specialists, the National Cotton Council, and other cotton leaders are exerting special effort to bring about more cottonseed treating.

Posters on the importance of proper seed treatment are being distributed in several states by local extension services. Newspaper mats which describe cotton diseases and how to control them are being distributed by extension editors. Radio interview scripts are being made available to county agents and radio farm editors, and other similar educational efforts are being made to make sure that seed treatment is given its chance to contribute to the huge 1951 cotton crop goal.

Many Committees Supply Useful Information

Representative of the work of many committees, is the job done by a three-man committee of Southern Extension Directors. It was composed of L. I. Jones, of Mississippi; D. W. Watkins of South Carolina; and J. D. Prewit, of Texas. Among other things, it distributed considerable information on cottonseed, including a Du Pont booklet called "How To Treat."

This booklet, which is also available without charge to readers of the AGRICULTURAL NEWS LETTER who write in for it, explains the new "slurry" method of treating seed, and lists suppliers of machines. Many farmers today buy

seed that is already treated, but for those who desire to treat their own seed, the process is now much simpler than it was 10 years ago.

The importance of treating seed is obvious when one realizes that it costs at least $5.00 an acre to replant in places where seed decayed in the soil, yet it costs only about 10 cents to protect an acre of seed with "Ceresan" M seed disinfectant. "Ceresan" M protects the cottonseed against diseases caused by organisms carried on the seed and in the soil. It reduces seed decay and sore-shin or damping-off, and also cuts down infections arising from surface seed-borne anthracnose and angular leafspot of cotton. Besides being very effective, it does not harm the seed when used according to directions.

Planters Urged to Follow Directions

To give the seed proper protection not only when it is germinating, but when the young seedling is sending up its stems, it is important that sufficient seed disinfectant be used. Labels should be carefully read, and directions followed.

The Arkansas Agricultural Extension Service, for example, has been active in telling planters that they should not only treat their seed before planting, but should use adequate amounts of chemicals.

Robert M. Emge, plant pathologist of the extension service at Fayetteville, Arkansas, said that a great deal of seed being used nowadays is not being treated at all, or is being treated with inadequate amounts of chemicals.

"Experience has shown that the full amount of material recommended by the manufacturer should be used," Mr. Emge said.

Increases of 10% to 40% Reported

"Seed treatment won't bring dead seed to life, nor increase the vigor of weak seed," Mr. Emge said. "But it will kill disease-producing organisms on the seed and make sure that the farmer gets the best possible stand of cotton from any particular lot of seed he buys."

How much does the proper treating of seed increase the yield in the case of cotton? There is a wealth of statistics on the subject. One of the best expositions, however, was that made by Dr. Royal J. Haskell, senior extension plant pathologist of the United States Department of Agriculture. In an address before the Delaware Section of the American Chemical Society in Wilmington, Del., on January 26, 1949, he said:

"In the case of cottonseed, increases in yield ranging from 10 to 15 per cent are common, and increases of 40 per cent are not infrequent. Treatment of cottonseed reduces seed decay and seedling blight, improves stands and thus avoids the necessity of replanting, and gives better yeilds of seed and lint. The practice has developed tremendously since 1935".

DEMOCRACY'S GREATEST WEAPON IS FLOURISHING, FREE ECONOMY

The story of American industrial developments is the "Big Truth" that can combat the "Big Lie" that is being "spread with such sinister force throughout the world," Crawford H. Greenewalt, president of the Du Pont Company, said recently in Camden, S. C. He spoke at a meeting of the people of Camden after dedicating Du Pont's new $20,000,000 plant there.

"Historically, communism has never yet made inroads in nations which enjoyed a free, dynamic, expanding economy," Mr. Greenewalt said. "It has never failed to make gains in nations where the economy was static or sick. It seems clear, therefore, that our most potent democratic weapon is not a military triumph or a diplomatic coup, but rather a sound, flourishing and, above all else, a free economy."

The dedication of the Camden plant, Mr. Greenewalt said, "brings to fruition a typical American industrial development." The new plant will make Du Pont's newest synthetic textile fiber, "Orlon" acrylic fiber.

Traditions of Freedom and Independence

Pointing to the "observance of the basic traditions of freedom and independence" in South Carolina, Mr. Greenewalt declared they are "qualities badly needed in the United States today."

"We need them as states, and as corporations and as individuals, for they are as vital to our future progress as they have been to our past accomplishments.

"This is as true in the industrial sense as it is in the political sense, for in the modern world it is obvious that the strength of nations can

be no greater than the strength of their industry. The freedom to develop and expand our manufactures is essential if we are to exist as a free and independent nation.

"This, I submit, is the best and most effective answer to those behind the Iron Curtain, whose propaganda efforts seem designed to weaken the faith of Americans in their economic system. The story of American industrial developments is, I believe, the 'Big Truth', with which we can combat the 'Big Lie' that is being spread with such sinister force throughout the world," he added.

Big Companies Are Needed

Mr. Greenewalt observed that "of late years, big companies have been under attack, and Du Pont is admittedly a big company, but I am sure that in 'Orlon' acrylic fiber we have something that could not have been developed by any thing else but a big company; big in human resources, big in its ability to take a large financial risk. If the appearance of 'Orlon' on the scene here today is good, then I think we might, without injustice, enter that development on the credit side of the big business argument.

"But if the arrival of 'Orlon' is to be accounted a desirable thing, then its benefits must, of necessity, extend beyond the corporate boundaries of the Du Pont Company. To be sure, Du Pont is hopeful that its investment in time, effort and its stockholders' money will be repaid with suitable interest. But the fact is that Du Pont cannot make a penny's worth of profit out of 'Orlon' unless the textile industry makes a profit as well and unless the customer is pleased enough with the final result to spend his hard-earned dollars."

Mr. Greenewalt pointed to the history of the ever-widening benefits of other products of Du Pont research and said, "there is every indication that 'Orlon', if it is successful at all, will widen its circle of benefits very rapidly.

Partnership With Small Firms

"There are now hundreds upon hundreds of small manufacturers who have been able to convert nylon into useful articles, at a profit to themselves and to their customers. And, usually, we find that the price paid for the raw material furnished by the original manufacturer represents only a small percentage of the price the consumer pays for the finished article."

Mr. Greenewalt pointed out that the nylon yarn in a pair of stockings that sells for $1.50 costs about ten cents, and that the nylon in a nylon staple dress that sells for about $50 costs $2.04.

Something Special Expected of New Fiber

Mentioning the experimental use of "Orlon" in men's clothing, Mr. Greenewalt said that a man's suit that would cost $65 would contain $5.78 worth of "Orlon" acrylic fiber yarn.

"Unless the suit gives something special in the way of performance to justify itself, no one will benefit from it, either manufacturer or consumer. One is dependent upon the other. And again, it is not a matter of replacement -- the contribution must be unique, not merely a substitution of one yarn for another, and must expand the total market.

"I think this has been borne out by the history of cotton textiles in recent years. Certainly it is true that the various synthetic yarns have had a profound effect upon the American textile industry, yet the synthetics currently account for only 20 per cent of the total consumption of textile fibers. It is simply a case of broadening the use. In 1920, when synthetics were a negligible factor, the average American used about 27 pounds of cotton and wool a year. The last figures I saw indicate that the current rate of consumption is something like 33 pounds a year, in addition to 7 pounds of rayon and a pound or two of other fibers - so cotton has lost little if any ground.

"I see no conflict here for I am sure that as the synthetic textile industry grows, the entire textile field will expand along with it.... Let us consider 'Orlon' only as an example of the contribution a free industry can make to a free economy - let us look forward to an even greater nation, proud of the strong sinews of its industry - a shining example to the world of the great accomplishments created by a society of free men."

TREATING SEED IS GOOD RULE FOR FLAX GROWERS

Good flax yields start with seed treatment, according to Ed Dyas, extension agronomist at Iowa State College, Ames, Iowa. In an extension release he enumerated three basic rules for flax growers: Treat seed, sow early, and use clean ground.

"Seed treatment," he said, "cuts down the amount of seed required and protects the seed from becoming diseased before it gets a start." He pointed out that Iowa's plant pathologist A. F. Sherf had recommended the use of one ounce of "Ceresan" seed disinfectant to a bushel of brown seed, which is the type used in Iowa.

Besides being a cash crop, flax is also known as a "nurse" or companion crop, as it provides just the right amount of shade for clover and alfalfa, Mr. Dyas said.

NEW FARM CHEMICAL GUIDE FOR SOUTH TEXAS VEGETABLE GROWERS

Case histories from the records of South Texas vegetable growers, showing how net profits from spinach were increased by $334.25 per acre, and from tomatoes by $71.25 per acre, are recorded in a guidebook on agricultural chemicals prepared by the Du Pont Company.

The publication carries a roundup of the latest information on control of crop-destroying insects and plant diseases, based on field experiments conducted in South Texas by state experiment station research men and Du Pont field investigators.

Examples of South Texas crops that have been boosted to higher yields by use of the proper chemicals include a demonstration in the spinach fields of the Rio Grande Valley in the winter of 1949-50. Fields treated with one of the modern fungicides are shown to have been protected against both white rust and blue mold. While these treated fields were harvested with an average of six and a half tons of marketable spinach per acre, neighboring fields that were not treated yielded only 1.95 tons per acre. Cost of treating was shown at just $7 per acre, so at an average price of $75 per ton, this treatment resulted in increased profits of $334.25 per acre. Growers may obtain a copy of this new guidebook by writing to the Agricultural Chemicals Division of the Du Pont Company, 513 Esperson Building, Houston 2, Texas.

SALVAGED SEED PAYS FOR COST OF CLEANING, TREATING

Cleaning and treating seed wheat pays for itself, Cliff E. Skiver, director of the Kansas Wheat Improvement Association, said in the KANSAS FARMER of August 19, 1950.

In a cover article on the subject, Mr. Skiver said that "seed salvaged as screenings is worth more than enough to pay for the cleaning and treating operation." He explained that the two operations can be carried out simultaneously with stationary or portable equipment that is now available.

"The disinfectant compound is discharged in the grain line as the cleaned seed leaves the cleaning unit. Cost of disinfectant for treating seed ranges from one cent to one and a half cents a bushel. This is such a cheap insurance against the ravages of stinking smut that no grower can afford to be without it."

MANY NEW AGRICULTURAL CHEMICALS EVALUATED DURING 1950 SEASON

More promising new chemical weapons against insect pests and plant diseases were tested on American farms and in experiment stations during the 1950 growing season than would have been "spread over a decade" only a few short years ago, it was pointed out by Dr. J. A. Evans of the Grasselli Chemicals Department of the Du Pont Company. He spoke at the 12th Annual Insecticide and Fungicide Conference held at Cornell University, Ithaca, N. Y., recently.

Dr. Evans addressed the conference of entomologists, plant pathologists, and other agricultural scientists from the United States Department of Agriculture and experiment stations and representatives of the nation's leading chemical companies engaged in the production of agricultural chemicals.

Hitting "only the high spots", the Du Pont entomologist summarized results of field testing of 18 specific chemicals last year. Special emphasis was placed on a group of new compounds for agricultural use which combine effective crop protection with maximum safety so far as toxic efforts on either animals or humans are concerned.

State and Federal Research Is Important

"There was a time in our history", Dr. Evans recalled, "when 18 new agricultural pesticides would have been spread over a decade or perhaps even a generation, and such a situation would have been set down in the records as a respectable accomplishment in this forward march to improve the use of chemicals on the farm. These 18 chemicals represent only a portion of the total number which were under evaluation by industry and federal and state institutions during the 1950 season.

"I believe that the important consideration to keep in mind is that every individual and organization involved in this agricultural pesticide business has an important responsibility to the farmer and agricultural enterprises in general in the United States. If we, and by that I mean industry, extension services and experiment stations, are to make an important contribution to practical agriculture as well as to the various professions to which we are attached, it is important that we carefully evaluate all new compounds in terms of the service they can render to the agricultural life of our country."

Care Necessary in Making Recommendations

Dr. Evans also stressed the indispensible services federal and state researchers have provided the chemical industry in proving the value of these new chemical farm "tools."

"Industry looks to state and federal organizations as a means of evaluating new compounds on an unbiased basis under widely different and constantly fluctuating biological conditions," he declared.

"If all of us are to command the respect and prestige so necessary for our continued success, we must be extremely careful in the conclusions and recommendations we make to the ultimate user of agricultural pesticides. Industry could not work out these problems alone, even though they had almost unlimited opportunity to expand their programs and personnel."

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY